

WHAT IS CLAIMED IS:

- 1 1. A method for interconnecting comprising:
2 aligning a first circuit board having a first plurality of through-holes with a
3 second circuit board having a second plurality of through-holes by
4 matching the first plurality of through-holes with the second plurality
5 of through-holes, the aligning providing an interconnection height of
6 zero between the first circuit board and the second circuit board;
7 aligning at least one pass-through socket with the aligned combination of the
8 first circuit board and second circuit board, the at least one pass-
9 through socket including pass-through socket through-holes; and
10 inserting one or more pins disposed on a pin header through the at least one
11 pass-through socket, the first circuit board and the second circuit
12 board.

- 1 2. The method of claim 1 wherein the pin header includes a plurality of
2 pins for passing through the at least one pass-through socket through-holes, the first
3 plurality of through-holes and the second plurality of through-holes.

- 1 3. The method of claim 1 wherein the aligning includes aligning a second
2 pass-through socket such that one pass-through socket is disposed on one side of the
3 aligned combination of the first circuit board and second circuit board and another
4 pass-through socket is disposed on an opposing side of the aligned combination.

- 1 4. The method of claim 1 further comprising:
2 floating one of the first circuit board and the second circuit board prior to
3 inserting the pin header, the floating enabling the first circuit board to
4 interconnect with the second circuit board with a connector aligned
5 along an axis different from the pin header.

- 1 5. The method of claim 4 wherein the connector is an optical connector.

- 1 6. The method of claim 1 wherein the first circuit board is a daughter
2 board and the second circuit board is a mother board.

1 7. The method of claim 1 wherein the first circuit board is an OC-192
2 transmit module disposed in a synchronous optical network (SONET) communication
3 system.

1 8. A method for interconnecting a first circuit board in multiple axes of
2 connection comprising:
3 connecting the first circuit board to a second circuit board in a first axis, the
4 connecting fixing the relative positions of the first circuit board and the
5 second circuit board in one plane;
6 aligning the first circuit board having a first plurality of through-holes with the
7 second circuit board having a second plurality of through-holes by
8 floating the first circuit board in another plane to match the first
9 plurality of through-holes with the second plurality of through-holes,
10 the aligning providing an interconnection height of zero between the
11 first circuit board and the second circuit board;
12 aligning at least one pass-through socket with the aligned combination of the
13 first circuit board and second circuit board, the at least one pass-
14 through socket including pass-through socket through-holes; and
15 inserting one or more pins disposed on a pin header through the at least one
16 pass-through socket, the first circuit board and the second circuit
17 board.

1 9. The method of claim 8 wherein the pin header includes a plurality of
2 pins for passing through the at least one pass-through socket through-holes, the first
3 plurality of through-holes and the second plurality of through-holes.

1 10. The method of claim 8 wherein the aligning includes aligning a second
2 pass-through socket such that one pass-through socket is disposed on one side of the
3 aligned combination of the first circuit board and second circuit board and another
4 pass-through socket is disposed on an opposing side of the aligned combination.

1 11. The method of claim 8 wherein the first circuit board is a daughter
2 board and the second circuit board is a mother board.

1 12. The method of claim 8 wherein the first circuit board is an OC-192
2 transmit module disposed in a synchronous optical network (SONET) communication
3 system.

1 13. A circuit board assembly comprising:
2 a mother board having a first plurality of through-holes;
3 a daughter board having a second plurality of through-holes, the daughter
4 board disposed with zero interconnection height relative to the mother
5 board;
6 at least one pass-through socket coupled to the combination of the mother
7 board and the daughter board, the at least one pass-through socket
8 disposed on an exterior side of the combination of the mother board
9 and the daughter board; and
10 a pin header having one or more pins, the one more pins insertable through the
11 at least one pass-through socket and the combination of the mother
12 board and the daughter board via the first and second pluralities of
13 through holes, the one or more pins making electrical contact to signal
14 contacts disposed in the mother board and the daughter board when the
15 one or more pins are inserted.

1 14. The circuit board assembly of claim 13 wherein the electrical contact
2 with the one or more pins is maintained by spring force of the signal contacts.

1 15. The circuit board assembly of claim 13 wherein the daughter board is
2 an OC-192 transmit module disposed in a synchronous optical network (SONET)
3 communication system.

1 16. The circuit board assembly of claim 13 wherein the daughter board is
2 connected via a connector, the connection fixing the daughter board and the mother
3 board in at least a first plane, the daughter board floating in a second plane prior to the

4 insertion of the one or more pins through the at least one pass-through socket and the
5 combination of the mother board and the daughter board via the first and second
6 pluralities of through holes.

1 17. The circuit board assembly of claim 16 wherein the first plane is an X-
2 Y plane, the connection further fixing the daughter board and the mother board in a
3 Y-Z plane, the daughter board floating in an X-Z plane prior to the insertion of the
4 one or more pins.

1 18. The circuit board assembly of claim 13 wherein the pin header
2 includes a plurality of pins for passing through the at least one pass-through socket
3 through-holes, the first plurality of through-holes and the second plurality of through-
4 holes.

1 19. The circuit board assembly of claim 13 wherein the circuit board
2 assembly includes a second pass-through socket such that one pass-through socket is
3 disposed on one exterior side of the aligned combination of the mother board and the
4 daughter board and another pass-through socket is disposed on an opposing exterior
5 side of the aligned combination.

1 20. The circuit board assembly of claim 13 wherein the daughter board
2 floats relative to the mother board prior to the insertion of the one or more pins of the
3 pin header, the float enabling the daughter board to interconnect with the mother
4 board with a connector aligned along a second axis different from that first axis in the
5 direction of the one or more pins of the pin header.

1 21. The circuit board assembly of claim 20 wherein the first axis and the
2 second axis are perpendicularly displaced.

1 22. The circuit board assembly of claim 20 wherein the connector is an
2 optical connector.

1 23. An apparatus for interconnecting a first circuit board in multiple axes
2 of connection, the apparatus comprising:

3 means for connecting the first circuit board to a second circuit board in a first
 4 axis, the connecting fixing the relative positions of the first circuit
 5 board and the second circuit board in one plane;
 6 means for aligning the first circuit board having a first plurality of through-
 7 holes with the second circuit board having a second plurality of
 8 through-holes by floating the first circuit board in another plane to
 9 match the first plurality of through-holes with the second plurality of
 10 through-holes, the aligning providing an interconnection height of zero
 11 between the first circuit board and the second circuit board;
 12 means for aligning at least one pass-through socket with the aligned
 13 combination of the first circuit board and second circuit board, the at
 14 least one pass-through socket including pass-through socket through-
 15 holes; and
 16 means for inserting one or more pins disposed on a pin header through the at
 17 least one pass-through socket, the first circuit board and the second
 18 circuit board.

1 24. The apparatus of claim 23 wherein the pin header includes a plurality
 2 of pins for passing through the at least one pass-through socket through-holes, the first
 3 plurality of through-holes and the second plurality of through-holes.

1 25. The apparatus of claim 23 wherein the means for aligning includes a
 2 means for aligning a second pass-through socket such that one pass-through socket is
 3 disposed on one side of the aligned combination of the first circuit board and second
 4 circuit board and another pass-through socket is disposed on an opposing side of the
 5 aligned combination.

1 26. The apparatus of claim 23 wherein the first circuit board is a daughter
 2 board and the second circuit board is a mother board.

1 27. The apparatus of claim 23 wherein the first circuit board is an OC-192
 2 transmit module disposed in a synchronous optical network (SONET) communication
 3 system.